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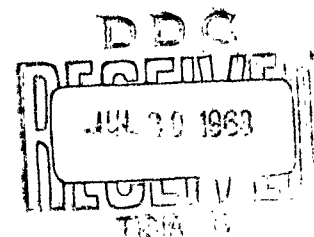
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**A CONTINGENCY MODEL FOR THE PREDICTION
OF LEADERSHIP EFFECTIVENESS**

FRED E. FIEDLER
UNIVERSITY OF ILLINOIS
TECHNICAL REPORT NO. 10
MAY, 1963

Group and Organizational Factors Influencing Creativity
Office of Naval Research Contract NR 177-472, Nonr-1834(36)

FRED E. FIEDLER, CHARLES E. OSGOOD,
LAWRENCE M. STOLUROW, AND HARRY C. TRIANDIS
Principal Investigators



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GROUP EFFECTIVENESS RESEARCH LABORATORY

DEPARTMENT OF PSYCHOLOGY

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Leadership Effectiveness

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A B S T R A C T

A Contingency Model for the Prediction of Leadership Effectiveness

Fred E. Fiedler

University of Illinois

A model for the prediction of group performance is described which attempts an integration of the group effectiveness research conducted over the past twelve years with ASo and LPC scores on 21 different types of groups. The model is predicated on the assumption that the type of leadership behavior required for good group performance is contingent upon favorableness of the group-task situation for the leader. Given the group's classification, group performance can then be predicted on the basis of the leader's permissive, non-directive, considerate (High LPC) vs., controlling, managing, directive (Low LPC) leadership behavior.

Previously obtained data are classified in accordance with three major dimensions, viz., affective leader-member relations, task structure, and leader-position power. A subsequent ordering of groups on the underlying dimension of the favorableness of the group-task situation for the leader can then be completed. Plotting leader attitudes and behaviors against the favorableness of the situation for the leader generates a U-shaped curve which indicates that controlling, managing, directive attitudes are required for conditions which are very favorable or very unfavorable to the leader, while permissive, non-directive, and considerate behavior is required for moderately unpleasant or unfavorable group-task situations.

Several validation attempts are briefly reported which provide preliminary support of the theoretical model which is here proposed.

A Contingency Model for the Prediction of
Leadership Effectiveness¹

Fred E. Fiedler

University of Illinois

The prediction of group performance is an important problem not only in social psychology but also in the management of military, scientific, and business enterprises. A considerable number of investigations has been devoted to this area since the Second World War, especially in an attempt to identify leadership traits and group attributes which might be potential predictors of team effectiveness. Although many individual studies have yielded promising results, the correlations between leader attributes and group performance have been very low, causing Mann (1959) to conclude,

"In no case is the median correlation between an aspect of personality covered here and performance higher than .25, and most of the median correlations are closer to .15."

The research effort, taken as a whole, has therefore not led to a satisfactory understanding of the group processes which contribute to effective team work. (Cf. also, Stogdill, 1948; Bass, 1960; George, 1962).

The present paper attempts to develop a general theoretical model of the leader's role in promoting group productivity based on a twelve year program of research which relates leader perceptions to performance of a wide variety of groups. These groups included basketball teams, surveying

¹The present paper represents Technical Report No. 10, ONR Project "Group and Organizational Factors Influencing Creativity" (NR 177-472, Nonr-1834(36)), Fred E. Fiedler, C.E. Osgood, L.M. Stolorow, and H.C. Triandis, Principal Investigators.

The writer is especially indebted to M. Fishbein, J.E. McGrath, W.A.T. Meuwese, C.E. Osgood, I.D. Steiner, H.C. Triandis, L.R. Tucker, and L.J. Cronbach, who offered suggestions and criticisms which assisted in the development of this model.

parties, military combat crews, industrial production units, corporation boards and management teams, as well as ad hoc laboratory groups . Most of these studies have been summarized in previous reports and papers (Fiedler, 1958, 1961, 1962).

We shall here confine the discussion to groups for which an adequate and face valid criterion of performance is available or can be developed. For the purposes of this paper we shall also distinguish between interacting and co-acting groups. In the former, the members can achieve their common goal only by successful cooperation and coordination of effort requiring interdependent action, i.e., they must work together to achieve their aim. A co-acting group is defined as one in which the group members can achieve their common goal by individual or parallel efforts. Typical examples of interacting and co-acting groups are basketball and track teams, respectively. Where the group's performance is derived by summing individual performance scores we are generally dealing with a co-acting group. Where there is a division of labor involving different interdependent functions, we are dealing with an interacting group. Our present concern is primarily with the latter.

Leadership is an interpersonal relation between members of a group in which influence is unevenly distributed. For the purpose of this paper we shall define a leader as the individual in the group who is formally or informally recognized by members of the group as having legitimate power to coordinate and direct the action of group members. He may receive this recognition (a) from superior authority, such as a company's board of directors, or the military commander of the organization, (b) formally from members of the group who elect the leader, or (c) informally, as indicated by sociometric preference choices, where a formal leader has not been otherwise imposed on the group. Where formal and informal leaders exist side by side in the group, we shall concentrate the discussion on the formal leader.

Group performance is clearly a very complex phenomenon which is affected not only by the personality of the leader but also by the group members' abilities and motivations, the nature of the task, and various situational determinants. Thus, what is permissible for the foreman of a construction gang may not be appropriate for the chairman of the board, and the leadership required for a football team differs from that of a legislative committee. The fact that the same type of leader behavior may not be appropriate for all group situations implies that we must first find an adequate framework for classifying groups before we can specify the type of leader-group interaction which will eventuate in successful group performance under various task-situations. The present model is based on the assumption that the prediction of group performance is contingent upon a satisfactory system for classifying group-task situations.

Insofar as it would be possible to specify a single dimension for classifying groups, it seems reasonable to hypothesize that it would be primarily related to the degree to which the leader is in a favorable position viz a viz his group, that is, the extent to which the leader's job of getting the group to perform the assigned task is relatively "easy" or "difficult". The favorableness which a task situation might have for the leader probably depends on several factors. Three phenotypic dimensions are here proposed for classifying the genotypic favorableness of the group-task situations. These are (a) the affective relationship between the leader and his members, (b) the power inherent in the leadership position, and (c) the degree to which the task is structured. We are here postulating that these dimensions will determine the type of leader behavior which maximizes effective group action. Other dimensions undoubtedly play a part in affecting the leader-member interaction. Whether these need to be considered in the future is, however, an empirical question.

Several previous attempts to investigate leadership effectiveness have sought to predict leader performance directly on the basis of one or more of these three, or similar dimensions, e.g., leader popularity, leader power, or different types of tasks.

The first section of this paper briefly describes the three dimensions to be employed in the classification of groups, and the variables for predicting performance. The second section presents a model which relates these variables to leadership style and group effectiveness, and discusses its implications. The third section briefly synthesizes the supporting data as well as several studies which serve as preliminary validation attempts.

A System for Categorizing Group-Task Situations

Affective leader-group relations. The personal relationship between the leader and key members of his group is probably the most important single determinant of group processes which affect team performance. The liked and respected leader can obtain compliance from his group under circumstances which, in the case of a disliked or distrusted leader, would lead to open revolt. It has also been shown (e.g., Godfrey, Fiedler and Hall, 1959; Fiedler, 1961) that the liked and accepted leader's interpersonal attitudes influence group performance to a significantly greater degree than similar attitudes of a leader who is sociometrically not accepted by his group.

A number of indices have been used to tap this particular dimension. Although the various measures are by no means identical, they seem to reflect relatively similar relations. Our studies have utilized the leader's sociometric acceptance by his co-workers, his expressed feelings of being accepted by his group, or the leader's rating of the group's atmosphere (GA) on simple scales similar to the Semantic Differential (Osgood, et al., 1957). The latter ask the leader to describe the group on 10 - 20 item scales

consisting of eight point continua such as:

friendly :—3—:—7—:—6—:—5—:—4—:—3—:—2—:—1—: unfriendly

supportive :—3—:—7—:—6—:—5—:—4—:—3—:—2—:—1—: hostile

cooperative:—3—:—7—:—6—:—5—:—4—:—3—:—2—:—1—: uncooperative

The leader who feels (and is) accepted by his group members is obviously able to act more decisively and with more confidence than the leader who feels rejected or distrusted by the members of his group. The degree to which the leader's relations with his followers is good or poor will then presumably determine in part the type of behavior appropriate for directing the group task. For purposes of the present analyses, we have generally chosen groups in the upper and lower thirds of the Group Atmosphere or sociometric preference distribution.

It should be noted that the group climate and leader-group relations in laboratory studies tend to range from very pleasant to, at worst, moderately unpleasant situations. Thus, even the most stressful laboratory condition which we could devise produced a leader group atmosphere score of 5.0 (expressed as average item score) on a scale which ranged from 1.0 to 9.0. Hence, even the most stressful laboratory condition in our experiments fell above the midpoint of the group atmosphere score on the leader's ratings.

Real-life conditions undoubtedly generate situations which appear very stressful to the leader. This might be the case of a group which strongly rejects its leader. Under these conditions it appears reasonable to hypothesize that the group-task situation will be a very unfavorable one for the leader outweighing other factors in the situation.

The task structure. The second important dimension describes the nature of the task in terms of its clarity or ambiguity. Some tasks are highly structured and unambiguous and allow little or no deviation from a prescribed course of action: e.g., a missile crew performing a count-down. Here, the leader and his group members know exactly what needs to be done, how it is to

be done, and who is to do which part of the job. The leader's major responsibility may here be confined to motivating his members and coordinating their work.

In contrast, when a committee is given the task such as of thinking up a program for the annual picnic, the leader knows no more than do the members, and he cannot readily order anyone to execute such a task in a specified manner. This may be true even in situations in which the leader has considerable formal power, e.g., a professor working with his assistants on plans for a research project, or an army officer working with enlisted specialists.

The structure of the task is here operationally defined by four of the scales developed by Marvin Shaw (1962). These could be reliably assessed by three independent judges who rated 35 tasks on eight point scales with a resulting interrater agreement of .80 to .88. The four dimensions are:

Decision varifiability. The degree to which the "correctness" of the solution or decision can be demonstrated, either by appeal to authority (e.g., the census of 1960), by logical procedures (e.g., mathematical demonstration), or by feedback (e.g., examination of consequences of decision, as in action tasks);

Goal clarity. The degree to which the requirements of the task are clearly stated or known to the group members;

Goal path multiplicity. The degree to which the task can be solved by a variety of procedures (number of different paths to the goal - number of alternatives for solution - number of different ways that the task can be completed). (reversed scoring);

Solution specificity. The degree to which there is more than one "correct" solution. (Some tasks, e.g., arithmetic problems, have only one solution that is acceptable; others have two or more, e.g., a sorting task where items to be sorted have several dimensions; and still others have almost an infinite number of possible solutions, e.g., human relations problems or matters of opinion).

The power inherent in the leadership position. A third major dimension in the task-situation is defined by the formal or informal power inherent in the leadership position. This includes the rewards and sanctions which are officially or traditionally at the leader's disposal, his authority over his men, and the degree to which this authority is supported by the organization within which the group operates. The leader's power is, generally speaking, inversely related to the power of his members.

The man who occupies a powerful leadership position may be able to obtain compliance even though he is personally resented by his group members. The chairman of a volunteer committee may have to influence the group by persuasion or other indirect means suggested by Hemphill's term, "consideration". (Hemphill, 1950).

The dimension of "leader position power" has been tentatively defined by a checklist rating of the leader's position. This list is here presented in full. All items are given one point except for 4a, b, c which are weighted +5, +3, and -5, respectively.

- 1a. Compliments from the leader are appreciated more than compliments from other group members.
- b. Compliments are highly valued, criticisms are considered damaging
- c. Leader can recommend punishments and rewards
- d. Leader can punish or reward members on his own accord
- e. Leader can effect (or can recommend) promotion or demotion
- 2a. Leader chairs or coordinates group but may or may not have other advantages - i.e., is appointed or acknowledged chairman or leader
- b. Leader's opinion is accorded considerable respect and attention
- c. Leader's special knowledge or information (and members' lack of it) permits leader to decide how task is to be done, or how group is to proceed
- d. Leader cues members or instructs them on what to do
- e. Leader tells or directs members on what to do or what to say

- 3a. Leader is expected to motivate group
 - b. Leader is expected to suggest and evaluate the members' work
 - c. Leader has superior, or special, knowledge about the job, or has special instructions, but requires members to do job
 - d. Leader can supervise member's job and evaluate it or correct it
 - e. Leader knows own as well as members' job and could finish the work himself if necessary (e.g., writing a report for which all information is available).
-
- 4a. Leader enjoys special or official rank and status in real life which sets him apart (or above) group members -- e.g., military rank, or elected office in a company or organization. (+5 points)
 - b. Leader is given "special" or "official" rank by experimenter to simulate for role playing purposes, e.g., "you are a general", or, "the manager". This simulated rank must be clearly superior to members' rank, and must not just be that of "chairman" or "group leader" of the group during its work period. (+3 points)
 - c. Leader's position is dependent on members. Members can replace or depose leader. (-5 points).

The tasks which are described in this report were rated by four independent judges with interrater agreement of .95. The average scores were converted to percent of total score to provide an index of leader position power (PP). A score of 90% indicates, therefore, that the position power of the leader was rated 90% of maximum on the scale (i.e., 18 points of 20).

Interrelations of the task-situation dimensions. A rough categorization of task-situations into "high" and "low" groups on the three major dimensions leads to an eight celled cube (Figure 1). According to our hypothesis, a group located in one cell or "octant" of this three dimensional space may then require a different leader-group member interaction than a group located in an adjacent space. As mentioned before, the leader-member relations

dimension extends only from "good" to "moderately good". (An Octant V-A was later added to include groups in which leader-member relations were very poor.)

Although it is difficult to determine empirically what the intercorrelations of these three dimensions might be over all groups, the leader will tend to have greater power in groups which have a structured task than in groups which have a highly ambiguous task. Certain tasks are also naturally more conducive to better leader-member relations than are others. This is exemplified by interpersonal relations which tend to develop when planning a party, or participating in a group game, as against work under highly competitive conditions or in an unpleasant environment (Sherif and Sherif, 1953; Sells, 1962).

The three dimensions which are here postulated have previously been described in similar terms by others who have worked with small groups. Thus, Cartwright and Zander (1960) speak of task structure or division of labor, power structure (which is closely related to our position power) and sociometric or friendship structure. Hemphill (1950) speaks of structure-in-interaction and consideration, and Schutz (1953) suggests the dimension of control (related to position power) affection and inclusion (related to our interpersonal relations). These dimensions thus appear to be meaningful ways for describing groups and task situations.

Prediction of Group Performance

Our research program has utilized two major predictors. These are (a) the leader's and members' ability measures, such as intelligence and achievement scores, and (b) the leader's interpersonal attitudes as measured by his generalized perception of most and least preferred co-workers.

Leader and group member abilities. Intelligence and task relevant ability scores are obviously important in the prediction of human performance, be it for individual or for group tasks. Since we have utilized standard

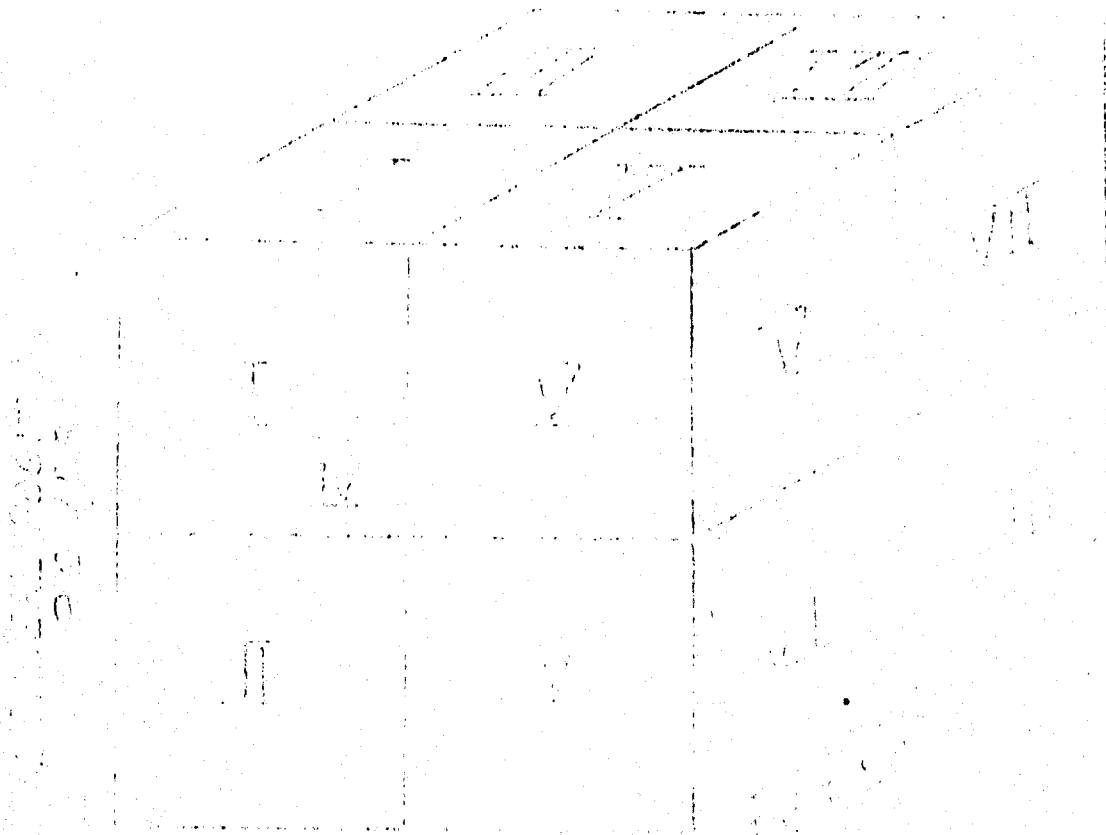


FIGURE 1. A Model for the Utilization of the
NUMBER ONE ONE

Figure 1. A Model for the Utilization of the

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measures of intellectual and task relevant abilities, such as the Army General Classification Test (AGCT), Miller Analogies, or tests from the Guilford battery on original and creative thinking, these need not be further described.

Interpersonal perception scores. All studies in our research program have used measures of interpersonal perception which indicate the leader's attitude toward co-workers, viz., the leader's description of his Least Preferred Co-worker (LPC) and the Assumed Similarity between Opposites (ASo). These scores are typically obtained by asking the individual to think of all others with whom he has ever worked. He is then asked to describe on simple bi-polar eight point scales the person with whom he was able to work best, and the person with whom he was able to work least well. These scores are obtained whenever possible before the individual has had contact with other members of his group. Thus, LPC and ASo scores are generally not based on descriptions of men with whom the subject works at the time of his rating. Even where we test men of operating groups, the individuals actually described are generally persons with whom the subject worked at some time in the past.

The ratings are made on items such as:

friendly :—8—:—7—:—6—:—5—:—4—:—3—:—2—:—1—: unfriendly
cooperative:—8—:—7—:—6—:—5—:—4—:—3—:—2—:—1—: uncooperative
stable :—8—:—7—:—6—:—5—:—4—:—3—:—2—:—1—: unstable*

The LPC score is obtained by summing the item scores of the individual's ratings of his least preferred co-worker. A high, or favorable score indicates high LPC. ASo scores are derived from profile similarity measures, D (Cronbach and Gleser, 1953), which compare the individual's descriptions of his most and least preferred co-worker. Since ASo and LPC are highly correlated (i.e., .30 to .95) we shall consider them equivalent measures and confine the

* These items are often identical with those used to obtain Group Atmosphere (GA) scores.

discussion to LPC even though earlier studies used the statistically more complex ASo scores (See Cronbach, 1955).

Behavior description analyses of typescripts as well as results from previous studies indicate the person with high LPC scores (who describes his least preferred co-worker relatively favorably) to be relatively permissive, considerate of the feelings of others, inclined to be compliant, and encouraging of good interpersonal relations among group members. The low LPC person tends to be controlling, active, directive (Fiedler, London and Nemo, 1961), more task- than satisfaction-oriented and more punitive (Hawkins, 1962) in his behavior as a leader.

The problem in our research has been to determine the conditions under which individuals with these interpersonal attitudes contribute to the group's effectiveness. Stated somewhat differently, what type of interpersonal relationship between leader and member is required for task success under the various types of task-situations in which a group may find itself?

A Theoretical Model of Group Effectiveness

As already discussed, the three dimensions of leader-group relations, leader position power, and task structure, may be visualized as forming a cube. It is also possible to develop a partial order of the various task-situations in terms of their favorableness or "advantage to the leader". We can then determine the direction of the correlations between the leader's LPC (or ASo) scores and the group's effectiveness within each of the eight octants.

The ordering or collapsing of the three dimensions is predicated on the assumption that the leader's relations with his members is the most important one of the three dimensions. A leader who is highly trusted and accepted by his men does not need to rely on the power of his position. Of second ranked importance is the task's structure. The structure in effect constitutes an order by higher authority of what the members must do. This is clearly

apparent in a highly structured task in which members must act in specified ways at specified times, i.e., according to a Standard Operating Procedure. The leader, in this situation, need not rely very strongly on his own authority or on the power of his position when the task is highly structured. He must do so to an increasingly greater extent under relatively weak task structure.

The partial order appears to be a reasonable one, although it is not a unique solution. It first orders the tasks on the leader-member relations, then on structure, and finally on the basis of leader position power. It should also be noted that the extreme negative pole on the leader-member relations dimension results in an additional octant(V-A) which is classified as least favorable for the leader. This is, of course, an arbitrary decision, although it seems reasonable to assume that a leader who is strongly disliked and rejected will have a very uncomfortable and unfavorable group situation.

The empirical results obtained in our previous studies are summarized in Table 1, which presents the median correlations between the leader's interpersonal perception scores, i.e., LPC or ASo, and group performance. Task structure and leader position power were evaluated on the basis of judges ratings, as indicated previously. (The individual studies on which these median correlations are based are synopsized on Table 2).

We can now also plot the median correlations between LPC/ASo and group effectiveness against a hypothesized "advantage for the leader" continuum which is obtained by collapsing the three dimensions. This leads to a U-shaped curve showing that the controlling, managing, and directive (low LPC) leaders are better able to cope with group task conditions which are either very favorable or very unfavorable. The permissive, considerate, passive (high LPC) leaders tend to perform best under moderately favorable or unfavorable conditions, i.e., in Octants IV, V, and VI.

In the very favorable conditions, where the leader has power, informal backing, and an unstructured task, the group is, as it were, ready to be directed on how to go about its task. Under the very unfavorable conditions the group is likely to fall apart, unless the leader's active intervention and control can keep the members focussed on the task. Under moderately favorable conditions, however, where the accepted leader faces an ambiguous task, a nondirective, permissive attitude may enable the group to participate more effectively, and to contribute a larger number of ideas which might lead to a good solution. A controlling leader may here be less effective because he may become too impatient, and he may inhibit original or off-beat suggestions. Where the sociometrically not too well accepted leader faces a structured task, the permissive, non-directive attitude might result in better performance since the members would not feel threatened by the leader, and since considerate leader behavior under these conditions is likely to mollify the members and induce them to cooperate.

It should again be pointed out that this classification system is designed primarily for the purpose of classifying the favorableness of the task-situation for the leader. While the classification treats the three dimensions as contributing equally to "favorableness", this is almost certainly an oversimplification. Thus, a leader might be so thoroughly resented that he could not operate effectively even under conditions in which the task is highly structured and his position enjoys high power. Similarly, a task may be so completely structured that any permissiveness on the part of the leader would be detrimental to performance. The present classification is a first approach which seems to apply to groups under a reasonably "normal range" of conditions. It is presented with the proviso that external stress in severely anxiety producing conditions may either cause the leader to lose influence (as shown by the fact that his ability scores do not correlate with group performance under these conditions) or that other factors assume a proportionately larger

Table 1

Median Correlations Between Leader LPC and
Group Performance in Various Octants

	Leader Relations	Task Structure	Position Power	Median Corre- lation	Number of Relations Included in Median
Octant I	Good	Structured	Strong	-.52	8
Octant II	Good	Structured	Weak	-.58	3
Octant III	Good	Unstructured	Strong	-.41	4
Octant IV	Good	Unstructured	Weak	.40	10
Octant V	Mod. Poor	Structured	Strong	.42	6
Octant VI	Mod. Poor	Structured	Weak		0
Octant VII	Mod. Poor	Unstructured	Strong	.05	10
Octant VIII	Mod. Poor	Unstructured	Weak	-.43	12
Octant V-A	Very Poor	Structured	Strong	-.67	1

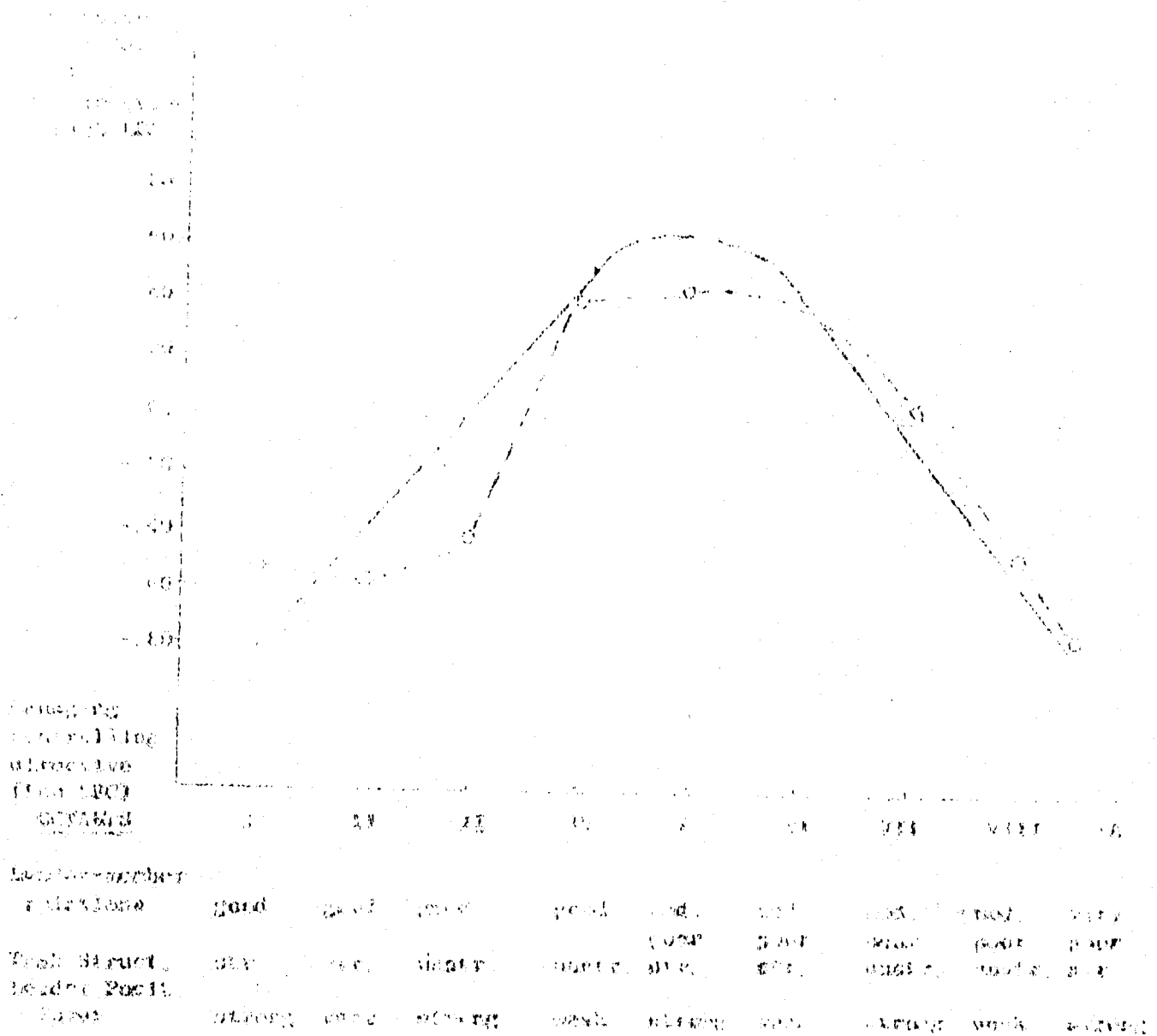


Figure 5. Percent controlling objective (from IPO) and behavior (from objective) for various group-task situations, and median correlations obtained for conditions.

role. The important point is that the particular type of leader behavior which is effective is contingent upon the favorableness of the group-task situation within which the leader operates. Further research is clearly required to clarify these problems.

Leader and Member Abilities and the Problem of Stress

A group composed of intellectually inferior and technically unskilled persons will naturally perform more poorly on almost any task than groups composed of able and qualified individuals. The major psychological problem consists in predicting the performance of groups whose members are reasonably matched in task relevant skills and abilities. Under these latter conditions the relations between individual abilities and group performance tend to be non-monotonic.

Our research has shown that the leader's intelligence and ability scores correlate positively with group performance only when (a) the leader is socio-metrically accepted by his group, (b) the group is cohesive, or (c) it operates under relatively stress free conditions. (Fiedler, 1961; Fiedler and Meuwese, 1962; Meuwese, 1963). A high correlation between the leader's ability score and the group's performance presumably reflects the degree of leader influence over the group task, i.e., either that the group followed the leader's suggestions, or that it permitted him to make major contributions to the task. In uncohesive or stressed groups, the leader's ability scores correlated negatively or near zero with group performance. This would suggest that the leader lacked control over the task.

It should be noted that each of the three situations listed above could be associated with anxiety experienced by the group: (a) the rejected leader is likely to feel more anxious and insecure than one who feels accepted; (b) Seashore (1955) and Neel (1955), among others, have shown that group cohesiveness is negatively related to member anxiety; and (c) stressful tasks obviously tend to be more anxiety arousing than those which are not

stressful. This suggests that the leader influences the group task primarily in Octants I - IV, while he must attend to maintenance functions in Octants V - VIII.

Strategies of Leadership

The model indicates various strategies a leader might adopt in order to improve the effectiveness of his group.² For example, a controlling, managing, and directive leader who is given a relatively unstructured task might first need to structure the task and to clarify the group's problem, to move his group from Octant IV to Octant I. Similarly, a high LPC leader, whose group falls into Octant VIII (Poor relations with group, weak leader position, and unstructured task) should concentrate on improving his interpersonal relations with his group members, thus moving his group into Octant IV in which his leadership style would be conducive to good performance.

A different approach might apply for tasks which change their structure over time. It might here be possible to train a leader to modify his attitudes and behavior as the task progresses, or to utilize one type of leader during the unstructured planning and exploratory phases, and to substitute a different leader when the group task requires control and direction during its highly structured phases. Such a progression in task structure is, of course, quite common in research projects which tend to be ambiguous and unstructured during the planning phase and highly structured during the data gathering and data analysis phases. It is also well known (and consistent with the present model) that some business executives excel in organizing a company while others operate more effectively in the routine management phases.

² The main ideas for this section were originally suggested by Prof. C.E. Osgood, whose assistance is gratefully acknowledged.

Empirical Support for the Theoretical Model

This section organizes previously obtained data in terms of the theoretical model. In addition, several new studies and re-analyses of old data are also summarized which constitute preliminary tests of hypotheses derived from the model. Primary attention of this section will be given to studies relating leader attitudes to group performance.

Research on the relation between leader abilities and group performance was summarized in a recent paper (Fiedler and Meuwese, 1962). In brief, these studies, which dealt with military crews and laboratory groups, reported a median correlation of .74 between leader abilities (AGCT, Analogies Test, Proficiency Score) and group performance measures in groups which accepted their leader, or were cohesive. The corresponding median correlation for uncohesive groups, or those which sociometrically rejected their leaders, was -.22. Thus, the leader's influence over task performance was considerably greater in teams which accepted him, or which were cohesive, than in groups which rejected their leader, or which were uncohesive.

Leader Perceptions (LPC/ASo) and Group Performance

The groups which were previously studied are classified on Table 2 by Octants. As indicated before, this classification on the dimension of affective leader-member relations is based on sociometric indices or group atmosphere scores; leader position power and task structure were rated by four independent judges.

For clarity of data presentation this table also includes "validation evidence". This evidence consists of results from studies which were conducted recently in part to test the hypotheses arising from the model, as well as results obtained from re-analyses of old data in terms of hypotheses suggested by the model. The validation evidence is described in somewhat greater detail in the latter part of this section.

Table 2

Summary Table of Relations Obtained in Research with LPC and ASO Scores

OCTANTS I AND V
HIGH LEADER POSITION POWER - HIGH TASK STRUCTURE
GOOD/MODERATELY POOR LEADER-MEMBER RELATIONS

Study		Leader-Member Relations			N _I	N _V
		Good	Mod. Poor	OCTANT V		
		OCTANT I				

B-29 Bomber Crews. Military Commander in Oct.

I is sociometrically most preferred crew member and endorses keyman; is sociometrically most preferred crew member in Oct. V, but rejects his key man on crew.

Criterion 1: Radar bomb score-circular error average (Radar Observer or Navigator are keymen)

Criterion 2: % Satisfactory visual bomb runs (Bombardier is keyman) (Fiedler, 1955)

PP 92.5%

TS 8.0

-.81

.42

11

7

-20-

TS 8.0

-.52

.27

6

7

Army Tank Crews. Tank Commander in Oct. I is sociometrically most preferred crew member; in Oct. V is sociometrically most preferred crew member, but does not endorse his key man.

Criterion 1: Time to hit target (Gunner is keyman)

Criterion 2: Time to travel to target (Driver is keyman) (Fiedler, 1955)

PP 92.5

TS 8.0

-.60

.60

6

5

TS 8.0

-.33

.43

Anti-aircraft Artillery Crews. Commander in Oct. I is sociometrically most preferred crew member; in Oct. V is among 10 sociometrically least preferred crew members.

Criterion: Location & acquisition of unidentified aircraft. (Hutchins and Fiedler, 1960)

PP 92.5

TS 7.3

-.34

.49

10

10

(Con't)

Table 2 (Con't)

Study	OCTANT I	OCTANT V	N _I	N _V
Infantry Squads. Squad leader is sociometrically most preferred crew member (No data available for sociometrically not chosen men) Criterion: Umpire ratings of field tests (Havron et al., 1951)	PP 94.0 TS 7.5 -.36		26	
Open Hearth Steel Shops. Foremen accepted by crew Criterion: Tap-to-tap time (tonnage per unit of time) (no rejected foremen were identified) (Cleven and Fiedler, 1956)	PP 92.5 TS 7.2 -.52		15	
Company Management. Gen. Mgr. in Oct. I is sociometrically accepted by board and staff; in Oct. V is sociometrically accepted either by board or staff Criterion: percent of company net income over three years (Godfrey, Fiedler and Hall, 1959)	PP 90.0 TS 5.6 -.67	.23	10	10
Median Correlation	-.52	.42		
Church Leadership Study - Membership Task Three person groups with leader appointed by experimenter. Only leader knew nature of task and criterion. Members acted as consultants. Group-member relations measured by group atmosphere scores of leader (Oct.I upper 3rd, Oct.V lower 3rd). Criterion: Compute maximum number of members attracted by advertising media.	PP 52.5 TS 6.6 -.60	.25	6	6

(Con't)

VALIDATION EVIDENCE

Table 2 (Con't)

Study	OCTANT I	OCTANT V	N _I	N _V
<p><u>Sales Display Teams.</u> Teams with detailed instructions for setting up sales displays and preparing merchandise. Only Oct.I data available.</p> <p>Criterion: Ratings by higher supervisors on conformity to performance standards.</p> <p>Tested by analysis of variance; low ASO leaders performed better than high ASO leaders. (Hawkins, 1962)</p>	PP 90.0			
	TS 5.8	-(F<.10)	76	
<p><u>Service Station Management.</u> Managers of gas stations in various communities. Company has detailed operating procedure for servicing, stock control, and reporting. (Only Oct.I data available)</p> <p>Criterion: Stock control, sales, monthly audit, and checks by inspectors. Tested by Chi-square. Low ASO managers performed better than high ASO managers. (Hawkins, 1962)</p>	PP 90.0			
	TS 5.8	-(X ² <.05)	60	

(CON'T)

Table 2 (Con't)

OCTANTS II AND VI
LOW LEADER POSITION POWER - HIGHLY STRUCTURED TASK
GOOD/MODERATELY POOR LEADER MEMBER RELATIONS

Study	Leader-Member Relations			N _{II}	N _{VI}
	Good OCTANT II	Mod. Poor OCTANT VI			
High School Basketball Teams. "Leader" is socio- metrically the most chosen team member, but is not appointed or elected, although he wields considerable influence. Study I Criterion: % of games won by mid- season	PP 18.0%				
Study II Criterion: 7 good & 5 poor teams tested at end of season (Pt. bis. r) (Fiedler, 1954)	TS 7.2	-.69		14	
	TS 7.2	-.58		12	
Student Surveying Parties. "Leader" is socio- metrically most preferred team member. Criterion: Accuracy of surveying pre- selected parcels of land as rated by instructors. (Fiedler, 1954)	PP 16.3				
	TS 7.3	-.51		22	
		Median Correlation			
		-.58			

VALIDATION EVIDENCE

Team Judgments. Two students were paired to judge
which answers are best for How Supervise Test.
A ldr. was designated by experimenter, but ldr.
had no special function.

Criterion: # of items completed. Tested by
Analysis of Variance, low ASo leaders were
better than high ASo leaders. (Hawkins, 1962) TS 8.0
PP 10.0

- (F < .05)

67

Note: No groups were classified as belonging into
Octant VI.

(CON'T)

Table 2 (Con't)

OCTANTS III AND VII		Leader - Member Relations		N III	N VII
HIGH LEADER POSITION POWER - UNSTRUCTURED TASK		Good	Mod. Poor		
GOOD/MODERATELY POOR LEADER-MEMBER RELATIONS		OCTANT III	OCTANT VII		
Study					
<u>ROTC Creativity Study. Three-man ROTC groups with leader officially appointed. Study was part of ROTC training course. Highest ranked cadet chosen as leader. Leader-member relations measured by group atmosphere scores from upper and lower third of distribution.</u>					
Criterion 1: Propose new pay scale for all ROTC services which will equalize pay scales. (Creativity rated by judges)					
Criterion 2: Tell fable on need for peace-time army (Creativity rated by judges)					
PP	45.0				
TS	3.4	-.43	.04	6	6
TS	2.2	-.72	.24	6	6
<u>ROTC Creativity Study - High Stress Condition.</u>					
Same as above, but groups worked under close supervision of senior army officers.					
Criterion 1: Pay scale proposal					
Criterion 2: Fable (Meuwese, 1963)					
PP	45.0				
TS	3.4	-.14	.11	6	6
TS	2.2	-.60	.57	6	6
<u>Navy ROTC Creativity Study. 4-man NROTC groups participated as part of NROTC ldrship class problem. Senior midshipmen were appointed ldrs. and freshmen & sophomores served as members. Ldrs. chaired and participated in session.</u>					
Criterion 1: Tell 2 stories based on TAT card 11. (Creativity rated by judges)					
Criterion 2: Develop arguments pro & con tough military training (rated by judges)					
Criterion 3: Suggest how average person can win fame and immortality (rated in terms of originality and uniqueness of solutions).					
PP	45.0				
TS	2.4	-.26	-.14	6	6
TS	4.2	-.07	.07	6	6
TS	4.7	-.44	-.07	6	6

(Con't)

Table 2 (Con't)

Study	OCTANT III	OCTANT VII	N III	N VII
Navy ROTC Creativity Study. Same as above but leaders supervised - were not permitted to contribute to task solutions, but could suggest procedures and veto ideas.				
Criterion 1: TAT stories	PP 59.0			
Criterion 2: Arguments	TS 2.4	.47	6	6
Criterion 3: Fame and Immortality (Anderson and Fiedler, 1962)	TS 4.2	.01	6	6
	TS 4.7	-.10	6	6
Median Correlations	-.41	.05		

VALIDATION EVIDENCE

Church Leadership Study - Housing Integration.
 3-person groups from church leadership training conference. Ldrs. appointed by experimenter. Ldrs. were given information about task and objectives of session. Members served as consultants and resource persons. Ldr.-group relations assessed by group atmosphere scores.
 Criterion: Develop plan to integrate a public housing project (Creativity and feasibility rated by judges)

PP 51.5
 TS 3.1

-.49 -.62

6 6

(CON'T)

Table 2 (Con't)

OCTANTS IV AND VIII		Leader - Member Relations			
LOW LEADER POSITION POWER - UNSTRUCTURED TASK					
GOOD/MODERATELY POOR LEADER-MEMBER RELATIONS					
Study		Good OCTANT IV	Mod. Poor OCTANT VIII	N IV	N VIII
<p><u>"Dutch" Creativity Study.</u> Four-man groups, consisting of Dutch university students. Leader-member relations inferred from tension indicators in content analysis and group composition, viz., homogeneity vs. heterogeneity, and formal or informal leadership.</p> <p>Criterion Task: Tell three stories about TAT picture; find alternative uses or invent plot titles. (Creativity rated by judges)</p> <p>Composition: Homogeneous religious membership and formal leaders, appointed by experimenter</p> <p>Composition: Heterogeneous groups, appointed leaders</p> <p>Composition: Homogeneous, informal ldrs.</p> <p>Composition: Heterogeneous, informal ldrs. (Fiedler, Meuwese, and Onk, 1960)</p>					
TS	1.7				
PP	28.0	.75		7	
PP	27.5		-.72		8
PP	10.0		-.64		6
PP	10.0		-.23		8
<p><u>Hypnosis Study.</u> Four-person groups, leader selected by experimenter's confederates.</p> <p>Leader-member relations based on group atmosphere scores</p> <p>Criterion: Tell three stories about same TAT card. (Creativity rated by judges) (Fiedler, London, and Nemo, 1960)</p>					
PP	28.0				
TS	1.7	.64	-.72	8	8

(CON'T)

Table 2 (Con't)

Study	OCTANT IV	OCTANT VIII	N IV	N VIII
<u>Church Leadership Study</u> . Four-person groups participating in leadership workshop. Leaders selected by experimenter, groups changed each day. Ldr.-mem. relations measured by group atmosphere				
Criterion 1: Justify minister's position on mercy killing (Creativity in this and other tasks rated by all participants)				
PP 25.0				
TS 2.7	.28	.03	6	6
PP 24.0				
TS 2.2	.89	-.03	6	6
PP 18.0				
TS 3.2	.14	-.40	6	6
PP 19.0				
TS 2.2	.37	-.60	6	6
(Fiedler, Bass, and Fiedler, 1961)				
<u>Mental Health Leadership Study</u> . Three-person groups, with chairman selected by experimenter. Ldr.-member relations measured by group atmosphere score.				
PP 24.0				
Criterion Task: justify use of elementary schools for approved research (Creativity rated by judges)				
TS 2.8	.44	-.76	7	7

(CON'T)

Table 2 (Con't)

Study	OCTANT IV	OCTANT VIII	N _{IV}	N _{VIII}
<u>ROTC Creativity Study - Internal Stress Condition.</u>				
Three-man groups, two army and one navy cadet. Leader was lowest ranking army man.				
Criterion Task 1: Develop new pay schedule	.49	-.04	6	6
Criterion Task 2: Tell fable about peace-time army (Creativity rated by judges) (Meuwese, 1963)	-.03	-.47	6	6
<u>Chairman, Board of Directors. Boards of directors of small cooperatively owned corporations. Ldr. - member relations estimated on basis of board chairman - general manager relations as indicated by sociometric ratings.</u>				
Criterion: Company net income over three years (Godfrey, Fiedler, and Hall, 1959)	.21	-.60	10	10
PP 35.0				
TS 4.1				
	.40	-.43		
Median Correlations				
<u>VALIDATION EVIDENCE</u>				
<u>Church Leadership Study II. Three-person groups assembled ad hoc, with leader designated by experimenter. Ldr.-group member relations assessed by ldr.'s GA scores and post-meeting questionnaires.</u>				
Criterion Task: Justify your position to children on reading prayers in school	.27	-.04	19	19
PP 22.5				
TS 2.2				

(CON'T)

Table 2 (Con't)

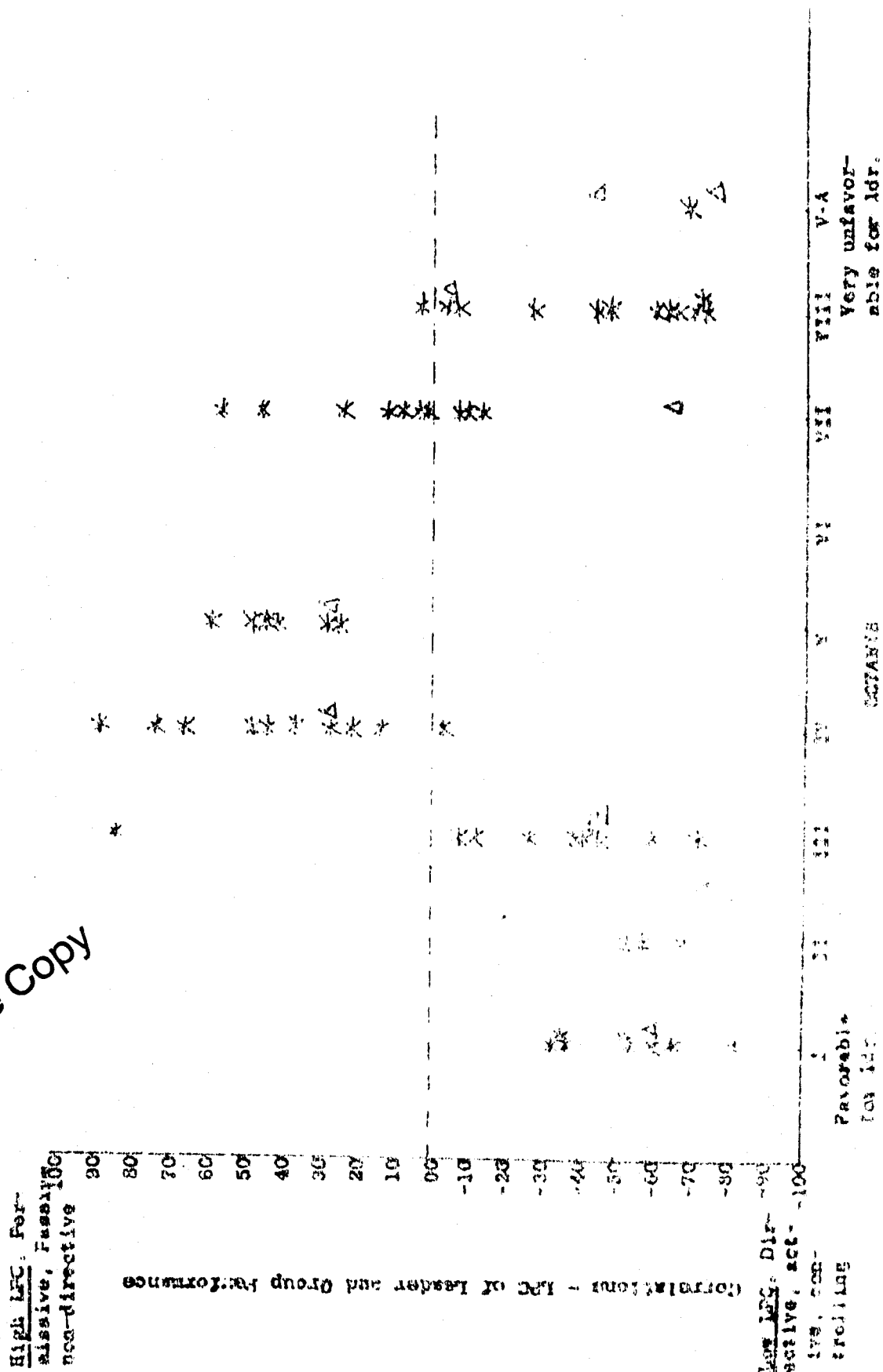
OCTANT V-A			Leader-Member Relations		N
VERY POOR LEADER-GROUP MEMBER RELATIONS			Very Poor		
HIGH LEADER POSITION POWER, STRUCTURED TASK			OCTANT V-A		V-A
Study					
B-29 Bomber Crews. As in Octants I and V, except that crew commander is sociometrically rejected and does not sociometrically choose his key-group members.			PP 92.5 TS 8.0	-.67	7
VALIDATION EVIDENCE					
Anti-aircraft Artillery Crews. As in Octants I and V, but crew commanders are sociometrically most rejected. (Re-analysis)			PP 92.5 TS 7.3	-.42	10
Company Management. As in Octants I and V, but general manager is sociometrically rejected by both, board of directors and staff. (Re-analysis)			PP 90.0 TS 5.6	-.75	7
Median Correlation			-.67		

Figure 3 summarizes the information contained in Table 2 in graphic form. The correlations between leader LPC/ASo scores and group performance are plotted by octants to indicate the range and dispersion of these correlation coefficients. The validation evidence is indicated by triangles. As can be seen, the correlations between leader scores and group performance measures are quite similar within each Octant. Even granting the post hoc nature of the classification, the consistency of the relations within octants is highly non-random in distribution.

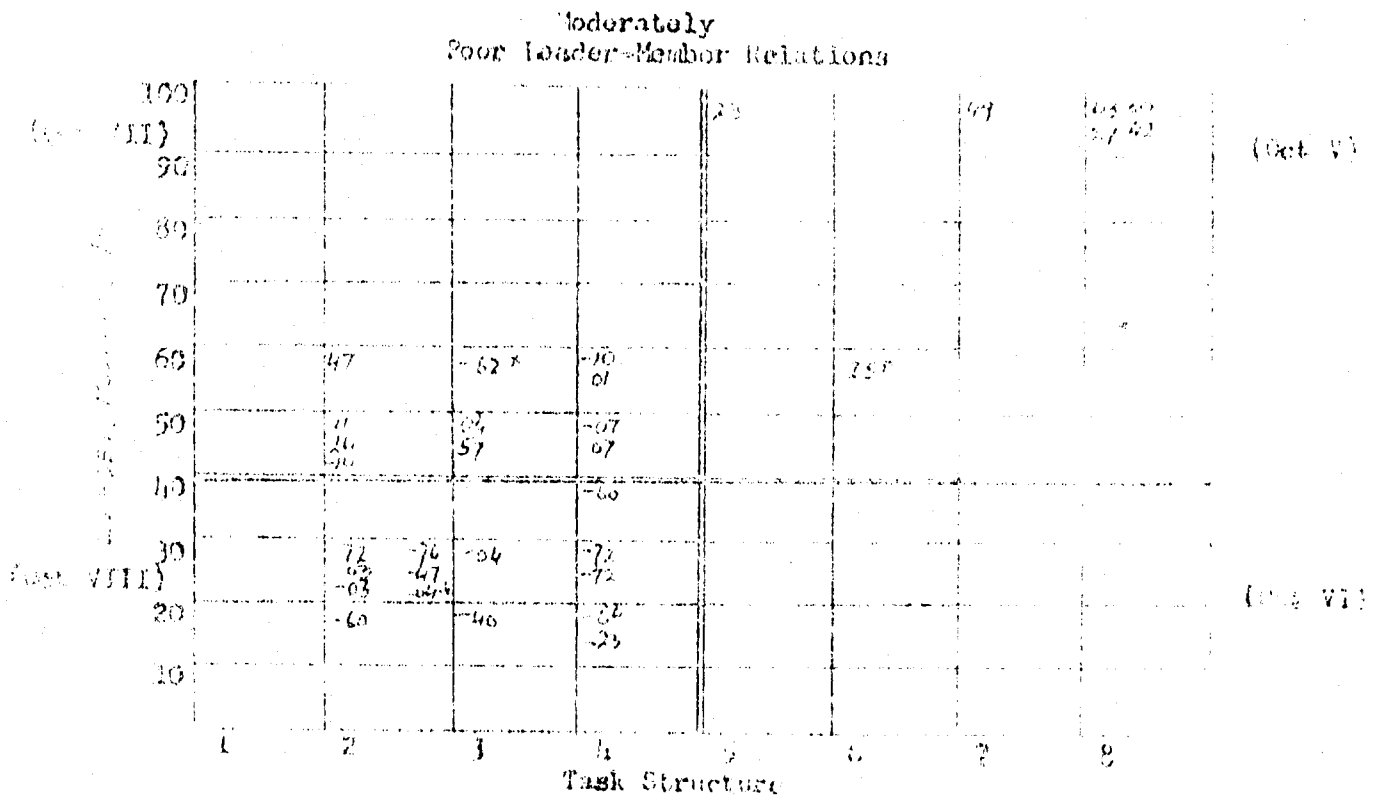
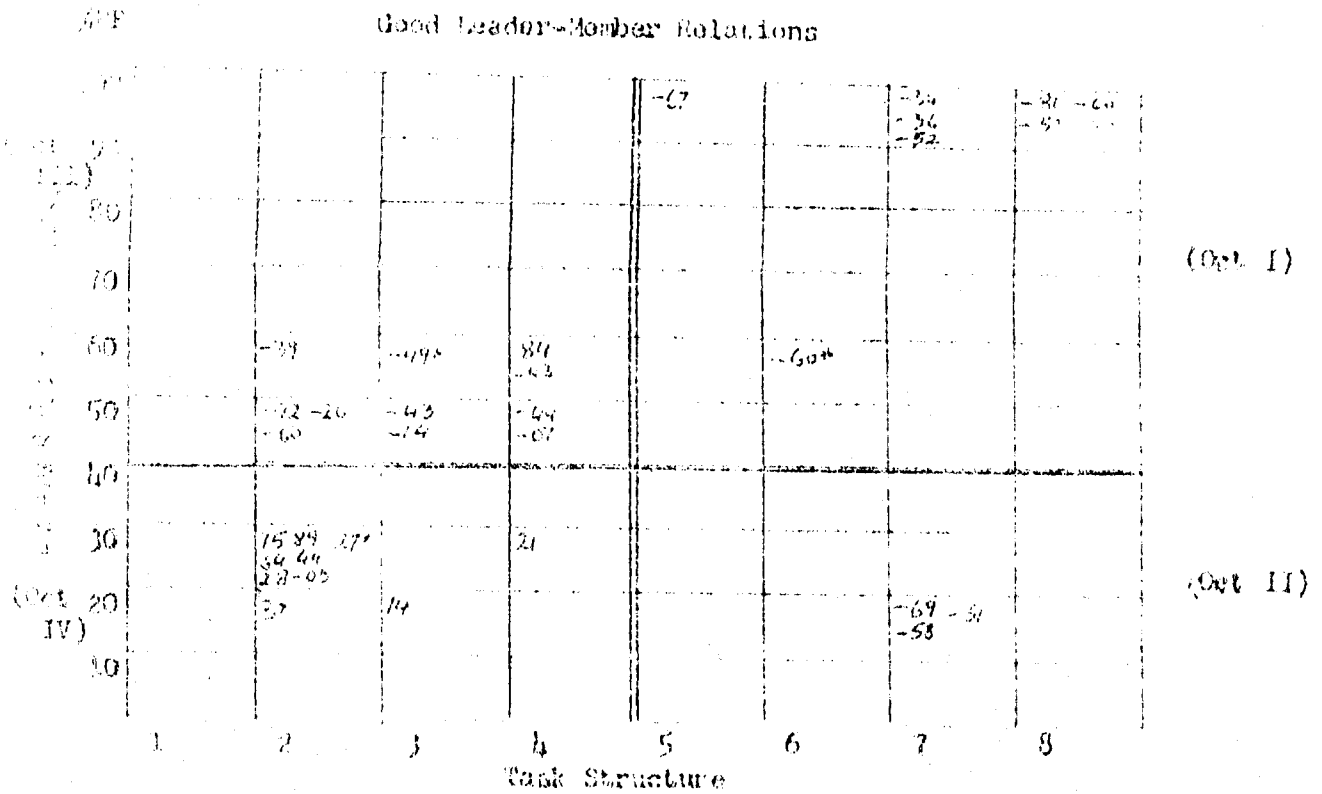
Figure 4 shows the correlations between leader LPC/ASo and group performance plotted against the two dimensions of leader position power and task structure for good and for poor leader-member relations. This figure shows first of all that many areas in this three dimensional space are as yet empty, and that further investigations are required to complete the adequate coverage of the space. Until this is done, much of our theorizing must remain highly speculative. Some hypotheses are perhaps possible. Thus, the part of the figure based on good leader-member relations suggests that the correlations between leader LPC and group performance in the upper left corner of Octant III might again be positive, i.e., that an accepted leader with extremely high position power might need to be very permissive and accepting in working with a group on a highly unstructured task. An example might be a general working with two or three privates on a creative task. Such a leader would have to be very non-threatening to put his group members sufficiently at ease so that they can work on a creative task.

The most important result indicated by Figure 4 is clearly the remarkable reversal in the direction of correlation coefficients in Octants IV and VIII, as well as in Octants I and V. While many of the interpretations are as yet speculative, it is quite obvious that the dimensions of Leader-Member Relations and of Task Structure act as very powerful moderator variables in determining the type of leader attitudes which maximize group performance.

Figure 1. Correlations of Leader LPC and Group Performance Plotted Against Octants, i.e., Favorableness of Group Task Situation for Leader.



Best Available Copy



a Validation evidence

Figure 4. Correlations between leader GPC/ASB plotted against Leader Position Power and Task Structure under good and poor leader-member relations.

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Validation Studies

Several recent studies tested hypotheses derived from the theoretical model. These will be described in greater detail in forthcoming technical reports. In addition, data from one study could be reanalyzed in light of the hypotheses suggested by the model.

One set of three studies was conducted within the context of a leadership training conference in which 57 persons participated. These individuals were assigned to three-men groups on successive days so that the groups were, in effect "new" for each of the studies. Each person also served as a leader on one of the days. The subjects of the study were mature men and women who held responsible leadership positions in the Unitarian-Universalist Church.

Relaxed vs. stressful conditions. The first study involved 19 groups which were given two similar tasks. The first of these required the groups to write a statement for their children to justify the parents' opposition to the reading of prayers in public schools. The second task involved a statement which would explain to children of another church the Unitarian-Universalist creed. The first task was given so as to create a relaxed and minimally stressful situation for group members. The second task was presented as a "real test of leadership" which was "quite difficult", and which required the groups to operate under considerable time pressure.

LPC and intelligence test scores had been obtained on the previous day. Sociometric preference ratings, group atmosphere scores, and behavior description ratings of fellow group members were obtained after each of the tasks. Group task products were rated by all conference participants during the same day.

Four independent judges classified the group situation as having low leader power and low task structure. Leader-member relations were hypothesized to be less strained for the leader during the first than during the second session. Thus, the groups were classified as falling into Octant IV during

the first task and into Octant VIII during the second task. A comparison of group performance during the first and second tasks supported the hypothesis. Groups with high LPC leaders performed better than groups with low LPC leaders under the relaxed condition, while groups of low LPC leaders were superior to those of high LPC leaders in the second, more stressful condition. These relations, tested by analysis of variance, were significant at the .05 level of confidence.

Housing integration task. This study again involved 19 three-person groups with an appointed leader. The task was designed to simulate a cross-disciplinary situation in which each of three participants learned different background material required for the solution of the group's problem.

The task consisted of planning a campaign to integrate a public housing project in a midwestern city. The task was, therefore, classified as unstructured. Only the chairman was given the requirements of the task and the objectives and limitations within which the group had to work. This information was too complex to be readily communicated to group members in the limited time which was available. The members were thus dependent on the leader's guidance and directions. One of his members or "consultants" played the role of a "city council member" who was given background material on the politics and history of the town, while the third member played the part of a "social scientist" who was informed about the relevant research dealing with desegregation and integrated housing.

The leader position power was judged as high, inasmuch as only the leader was given information about the task and since the situation gave him, therefore, control of the interaction. The group-task situation falls thus into Octants III and VII. Sub-dividing the groups into those with high, medium, and low leader group atmosphere scores led to the correlations between leader LPC and group creativity, listed on Table 3.

Table 3
Correlations Between Leader LPC Scores and Group
Performance on the Housing Integration Task

	<u>Rho</u>	<u>N</u>
High leader group atmosphere scores	-.49	6
Medium " " " "	-.54	5
Low " " " "	-.62	6

In general, the groups considered to be pleasant by the leader yielded relations consistent with the hypothesis derived from the model. The results obtained on groups with low GA scores were, however, not in line with the prediction. While post hoc explanations are always suspect and unsatisfactory, it seems highly probable that this particular task required an unusual amount of control and management on the part of the leader. If the task was to be completed within the specified time, the leader had to keep member participation to the point, and he had to exercise his power in order to develop the relevant background information. Whether or not this explanation is valid will need to be assessed in light of future research.

Membership campaign task. A third study, using the church leadership conference participants, involved a highly structured task which required the groups to compute the maximum number of potential members which could be attracted by means of an advertising campaign. Again, each member of the three person group was given a different set of data. Only the chairman knew the specifications of the task as well as the information about time and money which could be utilized for the advertising campaign. (This was, however, considerably less complex than the material in the Housing Integration Task.) One of his two "consultants" or members received a complex set of tables containing the advertising rates for various media under different conditions

(e.g., spot commercials vs. a series of announcements, newspaper advertisements for one, two, seven days, etc.). The other consultant or member received similarly complex information about the probable number of new members which could be expected from various types of advertisements and appeals.

The group's task consisted of combining the available data in such a way that the largest possible number of potential members could be obtained on a limited budget and a specified number of available man-hours. The task, therefore, was highly structured; it was objectively scorable, the goal was clearly stated, the methods for arriving at good solutions were known at least in principle, and the groups could estimate to a limited extent how well they were performing their task. As in the integration task, the leader's position was fairly strong since only the leader knew the goals and conditions of the task, and since his group members were placed in the position of consultants. The groups were thus classified as falling into Octants I and V.

Groups were again divided into those with high, medium, and low leader group atmosphere. The correlations obtained between the leader's LPC score and group performance are shown in Table 4.

Table 4

Correlations Between Leader LPC Scores and Group
Performance on the Membership Campaign Task

	<u>Rho</u>	<u>N</u>
High leader group atmosphere scores	-.60	6
Medium " " " "	.26	5
Low " " " "	.25	6

The results of this study clearly support the hypothesis, indicating that managing, controlling leader behavior is conducive to good performance when the leader's relations with his group are favorable, but that permissive, non-directive, considerate behavior is conducive when the group climate is relatively less favorable for the leader.

Re-analyses of data from real-life groups. The model, presented on Figure 2, suggested that very favorable and very unfavorable group task situations require managing, controlling attitudes which are reflected by the leader's low LPC score. This is the case of studies in Octant I which show high negative correlations between the leader's LPC or ASo score and the group's performance. Also consistent with the model, the correlations between leader LPC and group performance are positive for the groups in Octant V where the task is structured, the leader position power is high, and the leader-member relations are moderately poor.

It will be noted that leader-member relations were here inferred from sociometric preference ratings. In particular, the aircraft commanders of B-29 crews, listed under Octant I, were the most preferred members of their crews and they also had a good interpersonal relationship with their keymen on the radar bombing task (viz., the radar observer or the navigator). Although the crews in Octant V had aircraft commanders who were most preferred crew members, they sociometrically rejected their keymen. This situation was characterized as indicative of moderately poor leader-group member relations, certainly not as favorable as one in which the accepted leader and his keymen also sociometrically would choose each other. A really unfavorable situation presumably would exist in crews in which the aircraft commander is sociometrically rejected by his crew, and in which he also rejects his keymen. The correlation between leader's ASo and radar bomb scores was originally presented for crews which fitted this pattern (Fiedler, 1955) but the correlations could not be properly interpreted at the time, nor did an opportunity present itself to cross-validate the finding. The results of the B-29 study are shown on Table 5.

This table suggests a curvilinear relationship between the correlations on one hand, and the degree to which the leader-group relationship is a good one, on the other. Such a pattern of correlations would be consistent with the underlying assumptions of the model.

Table 5
Correlations Between Aircraft Commander's ASo Score and
Radar Bomb Score Under Different Conditions of
Sociometric Crew Choice Patterns*

<u>Sociometric Choice Pattern</u>	<u>Rho</u>	<u>N</u>
AC = MPC -> VO/N	-.81	10
AC = MPC -- VO/N	-.14	6
AC = MPC ≠ VO/N	.43	6
AC ≠ MPC -> VO/N	-.03	18
AC ≠ MPC -- VO/N	-.30	5
AC ≠ MPC ≠ VO/N	-.67	7

Aircraft commander is (=), or is not (≠) most preferred crew member and sociometrically accepts (->), is neutral to (--), or rejects (≠) keymen. (Radar observer and Navigator).

* Table adapted from Fiedler, 1955.

The present theoretical model suggested that it might be fruitful to determine whether very unfavorable relations could also be inferred from the sociometric preference ratings obtained in other studies in which a large number of groups participated. Such re-analyses were possible in data obtained in a study on anti-aircraft artillery crews (Hutchins and Fiedler, 1960) and in an investigation of 32 consumer cooperative companies (Godfrey, Fiedler and Hall, 1959).

The anti-aircraft artillery data were re-analyzed by selecting the 10 crews in which the crew commander was sociometrically most highly chosen by his men; the ten crews in which the leader received the lowest ratings; and the ten crews which fell most nearly in the middle of the sociometric choice distribution.

The correlations between the leader's LPC and the crew performance scores fully support the hypothesis derived from the model. These correlations are shown in Table 6.

A second re-analysis was performed on data from a study of general managers of farm supply cooperative organizations. These general managers worked closely with a board of directors to which they are responsible, and with a staff of three or four assistant managers who serve as department heads. As before, the groups were divided according to the sociometric choice patterns. We assume that a general manager who is chosen by board and staff members is in a more favorable position than one who is chosen either by board or by staff members, and that this is more favorable than being rejected by board and staff. Here again, the data support the hypothesis derived from the model. (Table 7)

What might happen under extremely unfavorable conditions in ad hoc groups that work on laboratory tasks is, probably, too early to say. On the basis of present knowledge it seems possible to conjecture that these groups may well fall apart, or that the leader will lose control over the group. It is hoped

that studies testing performance under these conditions can be conducted in the near future.

Table 6
Correlations Between Leader LPC Scores and
Anti-aircraft Artillery Crew Performance

	<u>Rho</u>	<u>N</u>
Most highly chosen Crew Commanders	-.34	10
Middle range in sociometric choices	.49	10
Lowest chosen Crew Commanders	-.42	10

Table 7
Correlations Between General Manager's ASo Score
and Company Net Income

	<u>Rho</u>	<u>N</u>
Gen. Mgr. is most chosen by board and staff (ASo Perf.)	-.67	10
Gen. Mgr. is chosen by board, but rejected by staff	.20	6
Gen. Mgr. is rejected by board, but chosen by staff	.26	6
Gen. Mgr. is rejected by board and staff	-.75	7

Discussion

This paper has attempted an integration of leadership effectiveness research which utilized interpersonal perception measures for the prediction of group performance. The majority of these investigations was conducted by the writer and his associates.

Classification of groups. In the past, one of the major problems in interpreting the results from studies in this research program has been the apparent inconsistency of the findings. Correlations which were high and significantly positive in one series of studies were high and significantly negative in other investigations. The present model accounts for these inconsistencies by postulating that the leader behaviors and attitudes which maximize group performance are contingent upon the particular group-task situation within which the leader and his group operate. The underlying continuum, along which these group-task situations are ordered, is related to the degree to which these are favorable or unfavorable for the leader. The phenotypic classification of groups, based on the three dimensions of leader-member relations, leader position power, and task structure, is one possible method by which the underlying, genotypic, dimension can be approximated.

As we pointed out before, most groups with which we deal in laboratory situations have a group climate which varies from very pleasant to moderately unpleasant. Rarely if ever do we find ad hoc laboratory groups in which the members attempt to sabotage their leader, or which deliberately set out to make the leader's life difficult. Such extreme conflict does, however, occur in real-life groups where the strongly rejected leader may find himself in a very difficult and unfavorable position, even though he may have a structured task and formal power.

The leader who is strongly rejected by his group should then be in a very unfavorable group-task situation. Therefore, the model suggested that we re-analyze previously obtained data of real-life groups in which the acceptance

and rejection of the leader spanned the full range. The expectation was that the LPC or ASo scores of highly accepted and highly rejected group leaders would correlate negatively with group performance, while the ASo or LPC of mildly rejected leaders would correlate positively with group performance. In other words, we hypothesized that the rejected or disliked leader could be more successful by controlling and managing the group than by guiding and persuasive behavior. This was clearly supported by the re-analyses presented in Tables 6 and 7. These results indicate that we must attempt to find a more adequate system of weighting the three dimensions for classifying groups so that an extreme point on one dimension would receive proportionately higher weighting than scores on other dimensions which fall into the normal range. Unfortunately, such an ordering presents a notoriously thorny psychometric problem. A similar problem in assigning weights may have been involved in classifying the investigation of church leadership groups which worked on the "housing integration" task. Where the need to control and manage the group may have been strong enough to outweigh the effects of low group atmosphere. As with all a posteriori explanations, a further validation of these findings is essential.

Quasi-therapeutic leader attitudes and effectiveness. A second major point, not covered in the body of the paper, deserves special attention. This concerns the connection between leadership and the adjustment of group members. There has been considerable speculation about the requirement that the effective leader must perform functions which assist the group members to adjust (e.g., Clark, 1955; Hutchins and Fiedler, 1960; Haernqvist, 1956; Gordon, 1955).

A number of studies have shown that the high LPC leader, who is permissive, non-directive, and considerate in his approach to the group, tends to promote better group relations and more satisfaction among his group members, and by implication, better psychological adjustment (Fiedler, London and

Nemo, 1961; Meuwese, 1963; Hutchins and Fiedler, 1960). These findings conform with Rogers' (1951) theory that non-directive, permissive interpersonal relations are therapeutic (Fiedler, Hutchins and Dodge, 1959). Obviously, however, the low ASo or LPC leader should then be relatively non-therapeutic for his members. Since low LPC leaders are effective in a variety of group situations, this means that many leader-member interactions which promote good group performance will not be therapeutic.

A bridge between the leader's and the therapist's attitudes may be found by considering that only certain types of leader interactions need, in fact, be quasi-therapeutic. These are likely to be groups which have interpersonal conflict and strained leader-member relations, or which have an anxiety arousing task. The group which is working on a structured task and with a powerful and accepted leader is in no particular need of "therapy". Such a need may exist, however, if the task is unstructured, since an ambiguous situation is likely to produce anxiety and tension among group members. This has been shown in several studies, such as Neel's (1955). Likewise, as shown by Seashore (1955) and others, dissension within a group, or low group cohesiveness, produce feelings of insecurity and tension. Thus, under mildly discomfoting or mildly anxiety arousing conditions, a therapeutic attitude on the part of the leader may serve to alleviate insecurity and anxiety, and it may thus enable the group members to perform more effectively.

Such a situation is especially common in co-acting groups, in which several individuals pursue a common goal with minimal interaction. An example of such a group is a track team in which the success of one man does not directly influence the action of another. This might be contrasted with a basketball team in which the members must interact in order to achieve their goal.

The leader's major functions in the co-acting team situation resolve primarily into motivating, advising, rewarding, and coaching, and in giving

psychological support and encouragement to the group members. Where the group faces an anxiety arousing task, basically quasi-therapeutic (i.e., supportive rather than directive and managerial) leader attitudes may contribute to good performance.

Studies have been conducted on a number of these teams. One of our investigations dealt with Naval Aviation cadets enrolled in formation flying at the Pensacola Naval Air Station. Each "flight" typically consisted of eight trainees who were under the tutelage of an instructor team consisting of four officers. The informal leaders of each flight were identified by means of sociometric indices; however, the informal leader had no official status and he did not wield formal power. The criterion of group performance consisted of flight grades by the instructors, and flight checks given by "check-ride" instructors from other squadrons. The summed ratings from each trainee within a flight constituted the flight's performance scores.

The flight training for formation flying is considered to be a quite anxiety arousing experience, since it involves tight formations as well as take-offs and landings on carriers.

The correlations between the ASo score of the sociometrically preferred member of the flight and the flight's rank was .42 ($p < .05$, $N = 36$). The Senior Flight Instructor's ASo score correlated .31 ($N = 14$). These results suggest, therefore, that the informal leader of the group or its senior instructor, promoted effectiveness by his ability to reduce the anxiety of his group members.

A similar study by De Zonia (1950) investigated the effectiveness of bowling teams. In a preliminary study, the sociometrically chosen leader's ASo score correlated positively with the average performance of his team's members, although a second sample of bowling teams yielded a correlation of only .03 ($N = 16$).

A laboratory study by Anderson and Fiedler (1962) utilized Naval ROTC cadets who were asked, among other things, to think up unusual uses for two common objects, viz., a coathanger and a ruler. The leader of the group had the task of rewarding and, if necessary, rejecting suggestions from his group members. He participated actively in one task condition (participatory leadership) but he was not permitted to contribute ideas and substantive changes in the other (supervisory) leadership condition.

The task was scored in terms of uniqueness, i.e., infrequency of the suggested uses. Here, again, the members were in effect in a co-acting group since the productivity of one member affected that of his colleagues to a relatively minor extent. As in the previously mentioned studies on co-acting groups, the correlations between the leader's LPC score and his group's performance were positive, i.e., .55 and .31 (N's = 15) under the supervisory and participatory conditions, respectively.

It can readily be seen how the permissive, accepting leader could promote productivity under these conditions. Unique solutions are, by definition, "off-beat" and sometimes silly. These solutions are more likely to occur under permissive, accepting or quasi-therapeutic leaders than under critical, analytic, and less permissive leaders. This might also account for the correlation of .34 between leader LPC and group performance under the supervisory condition of the "fame and immortality" problem. Here, again, each individual's contribution was relatively independent of the other members' ideas, and the criterion, as in the Unusual Uses task, depended upon the originality and the infrequency of the proposed solutions.

We must recognize, of course, that any attempts to relate the leader's task oriented and quasi-therapeutic attitudes are highly speculative at this time, especially since the intelligence of the leader as well as his perception of the group climate complexly affect his interactions with his group members (Fiedler, 1962; Fiedler and Meuwese, 1963). The evidence which has been presented here

suggests that a bridge between quasi-therapeutic attitudes and group performance does exist. Extensive future research will be required, however, to elucidate the role which these quasi-therapeutic leader relations play in promoting group effectiveness under various group-task situations.

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